INSPECTION & ACCEPTANCE
STEEL PILES

GENERAL

Steel H, pipe, and sheet piles shall meet the requirements of Article 4167 of the Standard Specifications. Acceptance for incorporation into a project will be based on a certified mill analysis of the steel and a satisfactory test report on any random monitor sample secured from a project and tested by the Central Laboratory and shall be from an approved source and/or approved supplier. Approved producing mills are listed in Appendix A of this IM. Approved suppliers are listed in Appendix B of this IM.

CERTIFIED MILL ANALYSIS

The manufacturer and/or supplier shall furnish an identification list for each and every shipment to a project. It shall include the project number, design number, heat number, number of pieces, size and length of piling in the shipment. A Certified Mill Analysis for each shipment is required. The Mill Analysis shall itemize the materials, the ASTM steel designation, section number description, actual or theoretical mass and the physical as well as the chemical test analysis/characteristics. The Mill Analysis shall indicate compliance with the applicable specification requirements.

At the time of shipment one copy of properly identified Certified Mill Analysis shall be forwarded to the Project Engineer and one copy to the respective District Materials Engineer.

H-Steel piles shall not be accepted in the field without the Mill Test Analysis and the identification list.

Steel H-piles shall be free of injurious defects, shall have a smooth finish and shall be true to dimensions, thickness and weights. Piles shall be marked with heat number, size, length and mill identification marks on each pile.

SPLICING/WELDING STEEL PILE

Field welding of steel pile shall conform to the requirements of IM 558 and to the requirements of Section 11.23 of the Construction Manual.

The number of permitted splices to achieve plan-specified lengths of steel H-piles shall be limited to the following:

Plan Pile Length in Feet (Meters)	Number of Permitted Welds (Splices)
0-50 (0-15)	0
51-100 (15.1-30)	1
101-150 (30.1-45)	2

NOTE: When steel H-piles are to be spliced, the shortest pile length shall be the last added length.

MONITORING INSPECTION

A. Steel H-Piles

1. Minimum sample rate frequency - one sample per source per size per District

2. The District Materials Engineer will coordinate sampling.

3. Samples shall be properly identified by heat number, source and size, and shall be accompanied with their respective Mill Test Report.

4. Sample size shall be a full cross-sectional area of a minimum 1.5 ft. (460 mm) in length.

5. Field Material personnel shall secure the sample from the project site.

6. The contractor shall be responsible for cutting the sample.

7. Samples will be processed in the Central Laboratory and shall be measured for width and depth, dimensional compliance and weighed for compliance with ASTM A6/A6M Specifications of ± 2.5% of the theoretical or specified amounts.

B. Sheet Piles

The mass of the pile will be considered satisfactory if the measured web thickness is not less than 2 1/2 percent below the theoretical specified thickness shown in the project plans or approved shop drawings. Field validation is required. (Alternatives may be allowed.)

C. Seamless or Welded Steel Pipe Piles

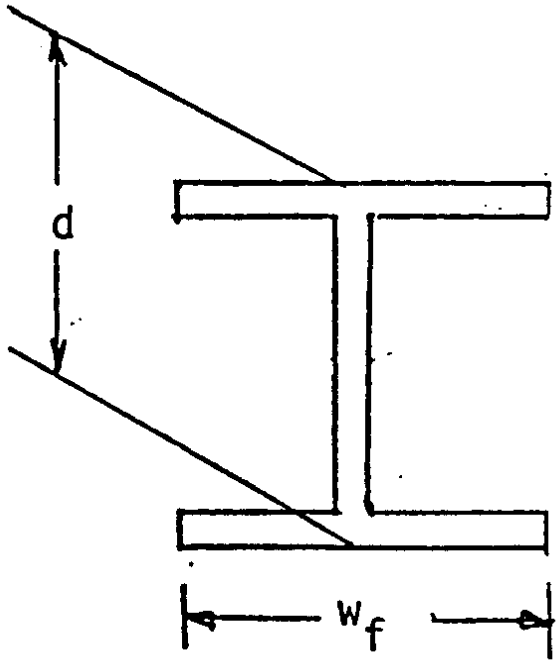
The measured diameter and wall thickness shall show compliance with tolerances listed in ASTM A252/A252M. This will be considered as adequate indication of mass compliance. Field validation is required. Pipe piles may be extended using Figure A, B or C shown in Appendix 11-4, IM 558, depending on the wall thickness and pile position at the time of splicing.

D. Pile Cut-off Pieces

Pile cut-ff pieces shall be accepted on the basis of Mill Test Report and proper identification (heat number and source). Welding of pile cut-off pieces shall conform to the requirements of IM 558 and to the requirements of Section 11.23 of the Construction Manual. It is the contractor's responsibility to have the cut-off pilings properly identified, marked and to possess all required paperwork (Mill Test Analysis and Laboratory Test Report).

ACCEPTANCE

Steel piling shall be accepted on the basis of the Mill Test Report and shall be from an approved source. The Mill Test Report shall show compliance with the tolerances outlined in ASTM A6/A6M. Any test sample that fails to comply with the requirements and tolerances will be handled on an individual basis as directed by the Materials Engineer and/or a designated representative.



(FOR CENTRAL LABORATORY'S USE)
DIMENSIONS AND TOLERANCES FOR WEIGHT COMPLIANCE

H-PILES - ENGLISH

Designation	Depth, d			Flange Width, w_f			Min. Acceptable Weight Lbs./Ft. 0.975 Theoretical
	Min.	Theo.	Max.	Min.	Theo.	Max.	
	In.	In.	In.	In.	In.	In.	
HP 14 x 117	14 1/8	14 1/4	14 3/8	14 11/16	14 7/8	15 1/8	114.08
x 102	13 7/8	14	14 1/8	14 9/16	14 3/4	15	99.45
x 89	13 3/4	13 7/8	14	14 9/16	14 3/4	15	86.78
x 73	13 1/2	13 5/8	13 3/4	14 7/16	14 5/8	14 7/8	71.18
HP 12 x 84							81.90
x 74	12	12 1/8	12 1/4	12 1/16	12 1/4	12 1/2	72.15
x 63							61.42
x 53	11 5/8	11 3/4	11 7/8	11 13/16	12	12 1/4	51.68
HP 10 x 57	9 7/8	10	10 1/8	10 1/16	10 1/4	10 1/2	55.58
x 42	9 5/8	9 3/4	9 7/8	9 15/16	10 1/8	10 3/8	40.95
HP 8 x 36	7 7/8	8	8 1/8	7 15/16	6 1/8	8 3/8	35.10

(FOR CENTRAL LABORATORY'S USE)
DIMENSIONS AND TOLERANCES FOR MASS (WEIGHT) COMPLIANCE

H-PILES - METRIC

Designation Nominal mm x kg/m	Depth, d			Flange Width, w_f			Min. Acceptable Mass kg/m 0.975 Theoretical
	Min.	Theo.	Max.	Min.	Theo.	Max.	
	mm	mm	mm	mm	mm	mm	
HP 360 x 174	358	361	365	373	378	384	169.6
x 152	353	356	360	371	376	382	148.2
x 132	348	351	355	368	373	379	128.7
x 108	343	346	350	365	370	376	105.3
HP 310 x 125	309	312	316	307	312	318	121.9
x 110	305	308	312	305	310	316	107.2
x 93	300	303	307	303	308	314	90.7
x 79	296	299	303	301	306	312	77.0
HP 250 x 85	251	254	258	255	260	266	82.9
x 62	243	246	250	251	256	262	60.4
HP 200 x 53	201	204	208	202	207	213	51.7